

ABSTRACT

The present invention provides a constitution of n-type ohmic electrode suitable for n-type group III nitride semiconductor, and a forming method thereof for providing low contact resistivity. The n-type ohmic electrode is provided to comprise an alloy of aluminum and lanthanum or comprises lanthanum at the junction interface with the n-type group III nitride semiconductor. The method comprising forming a lanthanum-aluminum alloy layer at 300°C or less to form an n-type ohmic electrode enriched in lanthanum at the junction interface.